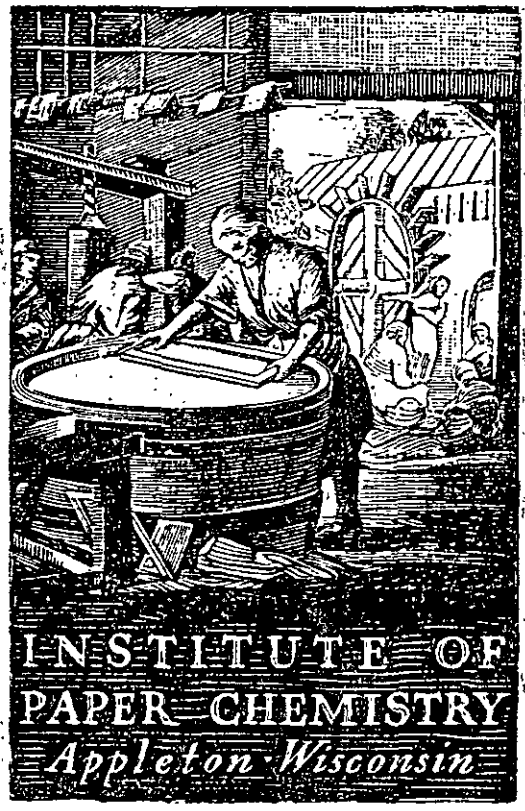

Institute of Paper Science and Technology
Central Files

CONTINUOUS BASELINE STUDY

Project 1108-13

Progress Report 134

to

FOURDRINIER KRAFT BOARD INSTITUTE, INC.

September 1, 1958

THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

CONTINUOUS BASELINE STUDY

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In conjunction with the F.K.I. Continuous Baseline Study, The Institute of Paper Chemistry has been directed to identify the participating mills by means of a scrambled system of code letters. Under this system, which was initiated in Progress Report 105, each mill is identified by a code letter different from that used for the previous month.

During the month of August, eighty-three different sample lots of 42-lb. Fourdrinier kraft linerboard from seventeen different F.K.I. mills were processed at The Institute of Paper Chemistry. A tabulation of the number of samples classified according to mill may be seen in Table I.

TABLE I

DISTRIBUTION OF 42-LB. LINERBOARD SAMPLES

Mill Code	Samples Submitted
A	5
B	4
C	2
D	4
E	2
F	0
G	4
H	11
I	9
J	0
K	8
L	2
M	8
N	8
O	6
P	2
Q	4
S	2
T	2
Total	83

These sample lots were tested for basis weight, caliper, bursting strength, and Elmendorf tear. The average strength results for each mill may be seen in Table II and are graphically presented in Figures 1 to 5. In addition to a comparison of the mill averages for the various tests, Table II also shows the current F.K.I. averages, the cumulative F.K.I. averages, and the F.K.I. indexes. The cumulative F.K.I. average is based on the results for the previous twelve months excluding the current period. Hence, in the case of the current report, it covers the period from August 1, 1957 to July 31, 1958. The F.K.I. indexes are obtained as follows:

$$\frac{\text{current F.K.I. average}}{\text{cumulative F.K.I. average}} \times 100 = \text{F.K.I. index (\%)}$$

The F.K.I. index provides a ready means of comparing the current quality with previous results. For example, the current F.K.I. average basis weight is 43.2 lb., and the cumulative F.K.I. average basis weight is also 43.2 lb. Hence, the F.K.I. index for basis weight determined in per cent as indicated above is 100% and signifies that the current F.K.I. average basis weight is the same as the cumulative F.K.I. average.

A comparison of the results in Table II and Figure 1 shows that the average basis weight results for all mills except A and P conform to the 42-lb. specification set forth in Rule 41. Mill I had the highest average basis weight of 44.5 lb. which was approximately 6.0% higher than the 42-lb. specification. The lowest average basis weight of 41.8 lb., which was approximately 0.5% lower than the 42-lb. specification, was associated with Mills A and P.

The amount by which the mills vary from the 42-lb. specification is as follows:

Mill Code	Per Cent
A	-0.5
B	+3.8
C	+3.1
D	+3.1
E	+2.6
F	--
G	+5.0
H	+2.4
I	+6.0
J	--
K	+3.8
L	+1.9
M	+3.6
N	+2.4
O	+2.1
P	-0.5
Q	+2.9
S	+3.1
T	+2.9

A comparison of the current F.K.I. average for basis weight for this period with that for the previous period shows that basis weight decreased from 43.5 lb. to 43.2 lb.

A comparison of the average caliper values for the various mills (see Figure 2) shows that the current mill averages varied from a low of 11.7 points for Mill P to a high of 14.0 points for Mill D. The current F.K.I. average is 12.9 points, slightly higher than the cumulative F.K.I. average of 12.7 points, as indicated by the F.K.I. index of 101.6%.

The average bursting strength values obtained for each mill are graphically presented in Figure 3. It may be observed in Table II and

Figure 3 that the current mill averages for bursting strength ranged from a low of 105 for Mill D to a high of 122 for Mill T. The current F.K.I. average bursting strength is 113 p.s.i. g., which is slightly higher than the cumulative F.K.I. average of 112 p.s.i. g., as shown by the F.K.I. Index of 100.9%.

A graphic comparison of the Elmendorf tear results shown in Table II for the various mills is given in Figures 4 and 5. These presentations show that Mill D had the highest average machine direction tear value of 362 g./sheet and that Mill L had the lowest value of 300 g./sheet. It may be further noted in Table II that the highest cross-machine direction tear value of 402 g./sheet was associated with Mill C and that the lowest value of 356 g./sheet was associated with Mill S. It may be observed also that the current F.K.I. averages for machine direction and cross-machine direction Elmendorf tear are very nearly the same as their respective cumulative F.K.I. averages, the current F.K.I. average for machine direction Elmendorf tear being slightly lower and for the cross-machine direction slightly higher.

A comparison of the F.K.I. indexes indicates that, for the current period, the current F.K.I. averages for caliper, bursting strength, and cross-machine direction Elmendorf tear are higher than their respective cumulative F.K.I. averages, whereas the current F.K.I. average for basis weight is the same as its cumulative and the current F.K.I. average for machine direction Elmendorf tear is slightly lower than its cumulative.

In order to compare the variation within a given mill, the test results for each particular mill have been tabulated in Tables III to XXI for Mills A through T, respectively.

In addition to the current and cumulative average, the mill factor and mill index are given for each mill. The cumulative mill average is the average test result obtained on the samples submitted by the particular mill for the previous twelve months excluding the current period. The mill factor and the mill index are obtained as follows:

$$\frac{\text{current mill average}}{\text{cumulative mill average}} \times 100 = \text{mill factor (\%)}$$

$$\frac{\text{current mill average}}{\text{cumulative F.K.I. average}} \times 100 = \text{mill index (\%)}$$

The mill factor and the mill index are a convenient means for comparing the current mill results either with the previous results for that particular mill or with the cumulative F.K.I. results. The reports also present a comparison of the test data obtained at the mills with test data obtained at The Institute of Paper Chemistry. These test data are presented and discussed on subsequent pages of this report.

It may be noted in Tables III through XXI that the test data include information about the sheet finish. The summarized results for the mills which submitted sample lots during the current period are as follows:

Mill Code	No. of Sample Lots W.F.	D.F.	Misc.
A			5[a]
B	4		
C	1,1[b]		
D	4		
E	2[b]		
F	No samples submitted		
G	4		

(Continued on the following page.)

Mill Code	No. of Sample Lots W.F.	D.F.	Misc.
H	11[b]		
I	9		
J	No samples submitted.		
K	8		
L	2[b]		
M	8		
N	8		
O	6		
P	2		
Q	4		
S	2		
T	2[b]		

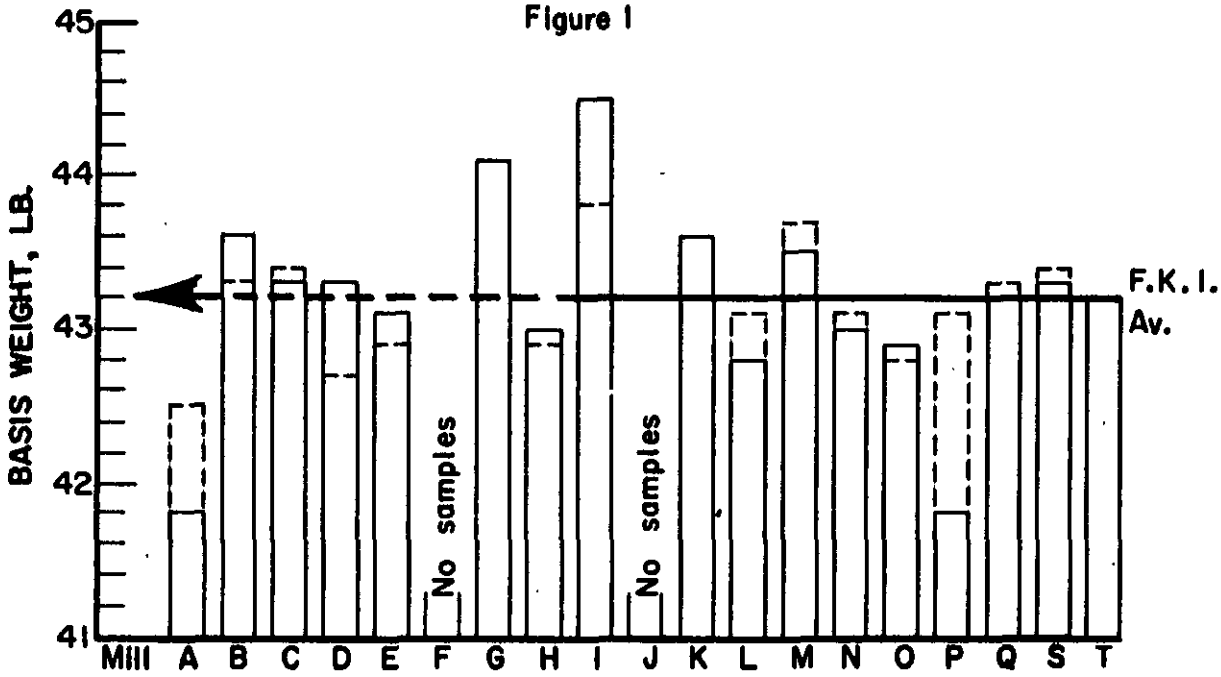
[a] Unidentified
[b] One side

TABLE II

SUMMARY OF COMPOSITE MILL AVERAGES--AUGUST 1 THROUGH AUGUST 31, 1958

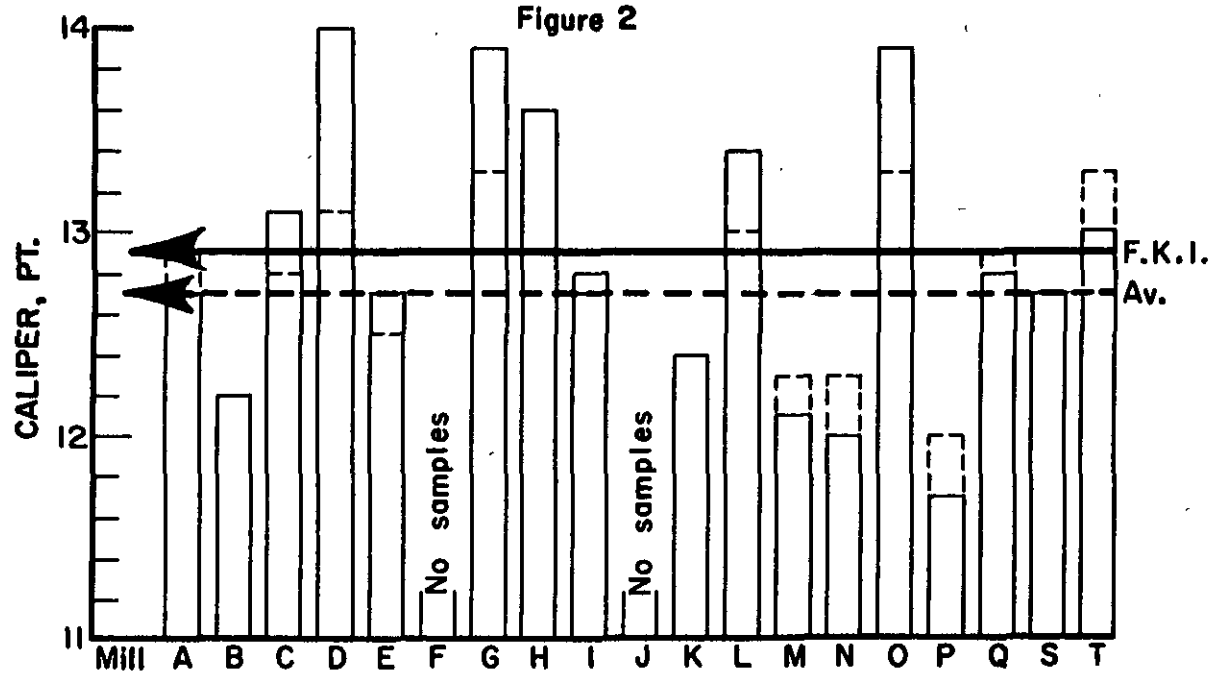
Mill	Basis Weight, lb.	Caliper, points	Bursting Strength, p.s.i. gage	Elmendorf Tear, g./sheet	
				In Machine	Cross Machine
A	41.8	12.7	110	342	389
B	43.6	12.2	112	359	364
C	43.3	13.1	114	351	402
D	43.3	14.0	105	362	382
E	43.1	12.7	109	309	393
F	No samples submitted.				
G	44.1	13.9	108	348	379
H	43.0	13.6	112	317	357
I	44.5	12.8	114	343	380
J	No samples submitted.				
K	43.6	12.4	114	314	367
L	42.8	13.4	108	300	363
M	43.5	12.1	115	331	376
N	43.0	12.0	114	306	368
O	42.9	13.9	114	304	364
P	41.8	11.7	116	342	389
Q	43.2	12.8	114	329	374
S	43.3	12.7	111	301	356
T	43.2	13.0	122	317	369
Current FKI Average:	43.2	12.9	113	328	375
Cumulative FKI Average:	43.2	12.7	112	332	374
FKI Index, %	100.0	101.6	100.9	98.8	100.3

Figure 1



COMPARISON OF BASIS WEIGHT RESULTS
(Period Aug. 1 – Aug. 31, 1958)

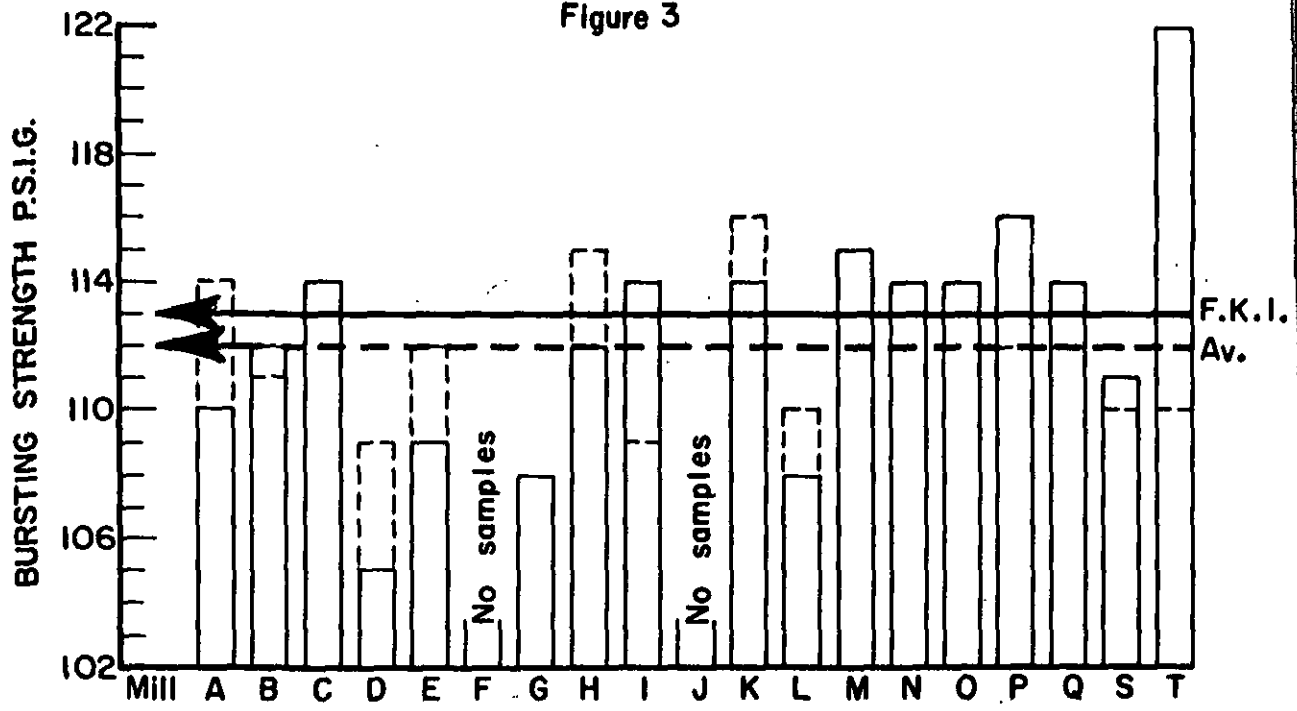
Figure 2



COMPARISON OF CALIPER RESULTS
(Period Aug. 1 – Aug. 31, 1958)

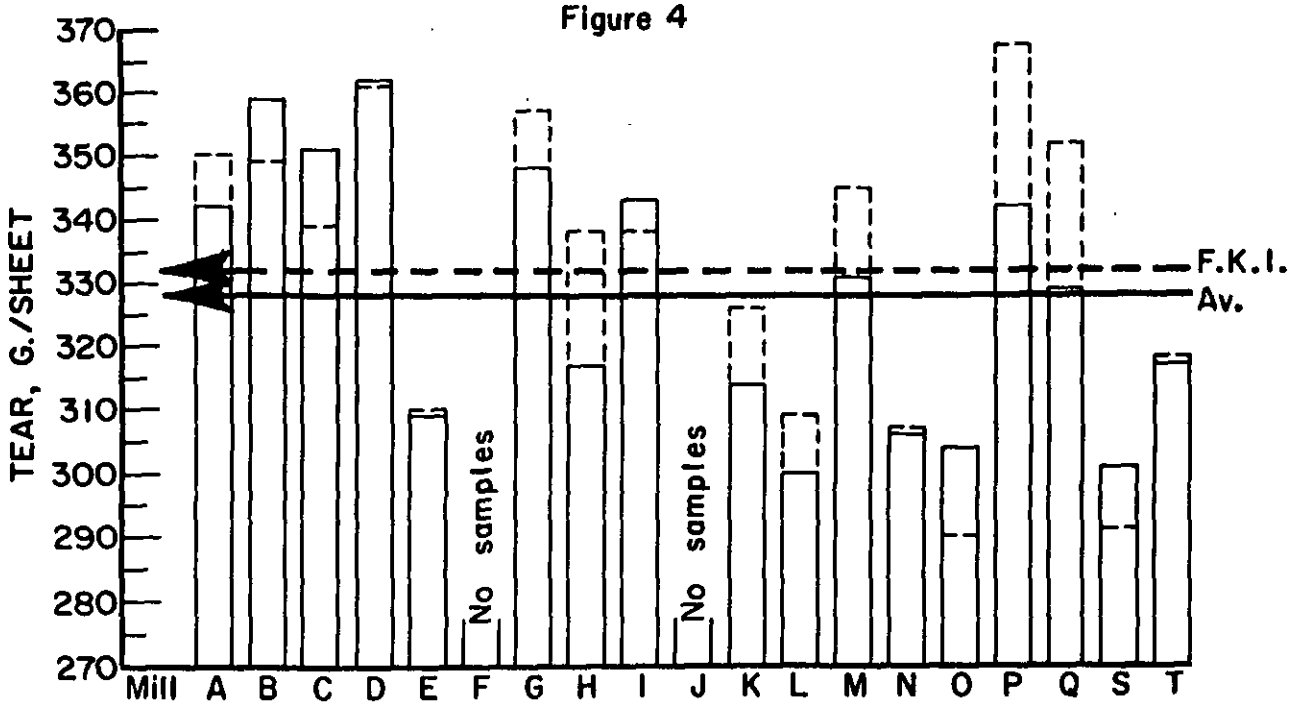
——— Current mill average
– – – – – Cumulative mill average

Figure 3



COMPARISON OF BURSTING STRENGTH RESULTS
(Period Aug. 1 - Aug. 31, 1958)

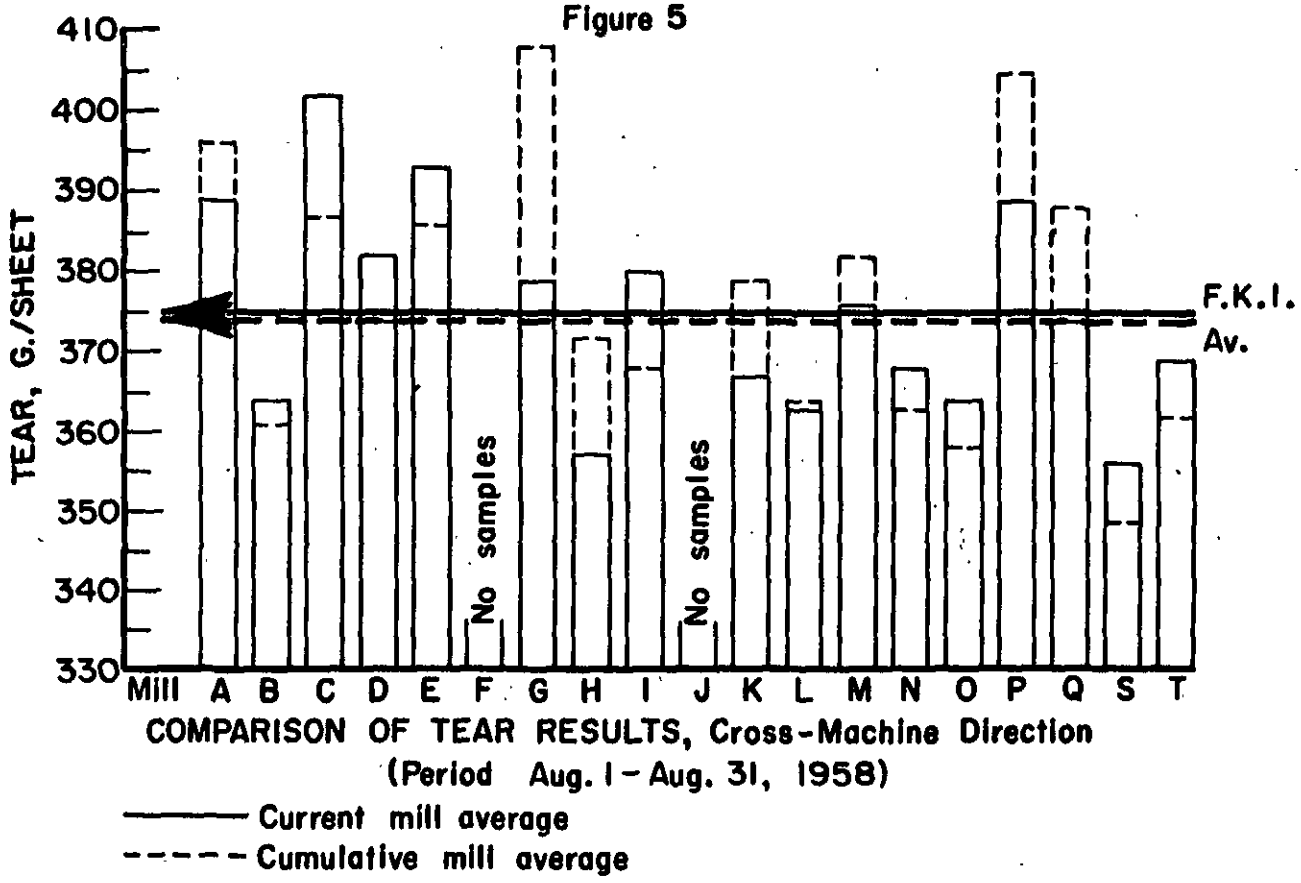
Figure 4



COMPARISON OF TEAR RESULTS, Machine Direction
(Period Aug. 1 - Aug. 31, 1958)

——— Current mill average
- - - - - Cumulative mill average

Figure 5



COMPARISON OF TEAR RESULTS, Cross-Machine Direction
(Period Aug. 1 – Aug. 31, 1958)

——— Current mill average
- - - - - Cumulative mill average

SUMMARY OF INSTITUTE DATA--AUGUST 1 THROUGH AUGUST 31, 1958

TABLE III

MILL A -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
179441	----	8/ 1/58	7/24/58	1	41.0	39.2	40.1	12.8	11.8	12.3	123	87	106	368	256	318	384	312	349[a]
179481	----	8/ 4/58	7/28/58	1	44.0	42.0	42.8	13.1	12.6	13.0	120	82	103	416	288	351[a]	416	352	379[a]
179610	----	8/13/58	8/ 6/58	2	43.0	41.4	42.0	13.6	12.1	13.0	128	94	111	384	320	349	432	376	404[a]
179646	----	8/18/58	8/ 8/58	2	43.6	41.4	42.2	13.0	12.0	12.7	132	93	114	408	296	347[a]	432	328	391[a]
179647	----	8/18/58	8/13/58	2	43.4	41.0	41.9	12.9	12.1	12.6	136	74	118	384	288	346	464	376	421[a]
Current Mill Average:							41.8			12.7			110			342			389
Cumulative Mill Average:							42.5			12.9			114			350			396
Mill Factor, %							98.4			98.4			96.5			97.7			98.2
Mill Index, %							96.8			100.0			98.2			103.0			104.0

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--AUGUST 1 THROUGH AUGUST 31, 1958 (continued)

TABLE IV

MILL B -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
179482	W.F.	8/ 4/58	7/ 9/58	-	44.0	42.0	43.2	12.7	11.3	11.9	127	79	113	408	320	375[a]	448	336	371[a]
179483	W.F.	8/ 4/58	7/ 9/58	-	44.6	42.2	43.7	12.6	11.5	12.1	128	95	115	392	336	365	408	336	364[a]
179492	W.F.	8/ 6/58	7/28/58	-	44.6	42.6	43.7	13.1	11.8	12.5	127	92	110	400	296	354	408	296	356[a]
179493	W.F.	8/ 6/58	7/28/58	-	44.4	42.6	43.7	13.0	11.8	12.4	120	87	109	384	296	342[a]	408	328	363[a]
Current Mill Average:							43.6			12.2			112			359			364
Cumulative Mill Average:							43.3			12.2			111			349			361
Mill Factor, %							100.7			100.0			100.9			102.9			100.8
Mill Index, %							100.9			96.1			100.0			108.1			97.3

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--AUGUST 1 THROUGH AUGUST 31, 1958 (continued)

TABLE V

MILL C — 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
179527	W.F.	8/11/58	7/29/58	2	45.2	43.4	44.0	13.2	12.7	13.0	137	107	119	400	328	359[a]	480	384	422[a]
179705	WFlS	8/22/58	8/13/58	2	43.6	41.8	42.5	14.2	12.8	13.3	133	89	109	376	296	343[a]	424	336	381[a]
Current Mill Average:							43.3			13.1			114			351			402
Cumulative Mill Average:							43.4			12.8			113			339			387
Mill Factor, %							99.8			102.3			100.9			103.5			103.9
Mill Index, %							100.2			103.1			101.8			105.7			107.5

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--AUGUST 1 THROUGH AUGUST 31, 1958 (continued)

TABLE VI

MILL D -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
179479	W.	8/ 4/58	7/24/58	2	44.8	44.0	44.2	14.6	13.9	14.1	125	85	106	392	320	355	440	344	379[a]
179480	W.	8/ 4/58	7/25/58	2	45.0	42.6	43.9	14.5	13.8	14.1	124	87	102	384	312	355[a]	448	336	379[a]
179524	W.	8/11/58	7/31/58	2	44.2	41.4	42.4	14.8	13.4	14.1	131	82	104	376	304	350[a]	416	336	379[a]
179525	W.	8/11/58	8/ 4/58	2	43.8	41.4	42.7	14.1	12.6	13.6	132	89	109	464	328	388	440	352	391[a]
Current Mill Average:							43.3			14.0			105			362			382
Cumulative Mill Average:							42.7			13.1			109			361			374
Mill Factor, %							101.4			106.9			96.3			100.3			102.1
Mill Index, %							100.2			110.2			93.8			109.0			102.1

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--AUGUST 1 THROUGH AUGUST 31, 1958 (continued)

TABLE VII

MILL E -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
179706	WF1S	8/22/58	8/12/58	1	44.0	42.0	43.3	13.5	12.3	12.8	132	97	113	328	248	307[a]	456	360	405[a]
179707	WF1S	8/22/58	8/13/58	1	43.8	42.2	43.0	13.0	12.2	12.6	123	88	105	344	288	311	432	344	381[a]
Current Mill Average:							43.1			12.7			109			309			393
Cumulative Mill Average:							42.9			12.5			112			310			386
Mill Factor, %							100.5			101.6			97.3			99.7			101.8
Mill Index, %							99.8			100.0			97.3			93.1			105.1

TABLE VIII

MILL F -- 42-LB. LINERBOARD

No samples submitted.

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--AUGUST 1 THROUGH AUGUST 31, 1958 (continued)

TABLE IX

MILL G -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
179488	W.F.	8/ 4/58	7/22/58	1	44.0	42.0	43.2	14.1	13.0	13.6	132	93	109	416	304	357	432	336	387[a]
179489	W.F.	8/ 4/58	7/22/58	1	44.4	42.0	43.3	14.5	13.5	13.9	125	89	108	384	296	345[a]	400	336	371[a]
179490	W.F.	8/ 4/58	7/23/58	1	46.0	43.6	44.5	14.5	13.2	13.9	125	90	108	376	288	342[a]	424	344	380[a]
179491	W.F.	8/ 4/58	7/23/58	1	46.0	44.0	45.4	14.9	13.8	14.3	120	88	108	392	296	349[a]	424	344	379[a]
Current Mill Average:							44.1			13.9			108			348			379
Cumulative Mill Average:							44.1			13.3			108			357			408
Mill Factor, %							100.0			104.5			100.0			97.5			92.9
Mill Index, %							102.1			109.4			96.4			104.8			101.3

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--AUGUST 1 THROUGH AUGUST 31, 1958 (continued)

TABLE X

MILL H -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
179515	WF1S	8/11/58	7/24/58	2	44.4	42.0	43.1	14.0	13.0	13.5	124	88	109	352	280	316	392	312	355[a]
179516	WF1S	8/11/58	7/25/58	2	44.0	42.0	42.9	14.2	13.9	14.0	123	81	99	336	264	307[a]	400	304	348[a]
179517	WF1S	8/11/58	7/26/58	2	44.4	42.4	43.6	14.5	13.2	13.7	135	73	111	416	280	331[a]	392	344	365[a]
179518	WF1S	8/11/58	7/27/58	2	43.2	41.6	42.2	13.8	12.8	13.2	145	92	117	368	240	307[a]	424	312	363[a]
179519	WF1S	8/11/58	7/28/58	2	44.0	41.0	42.6	14.3	13.2	13.9	136	84	105	336	248	290[a]	392	312	349[a]
179520	WF1S	8/11/58	7/29/58	2	43.8	42.0	43.0	14.3	13.5	13.8	128	101	116	352	280	307[a]	400	336	360[a]
179650	WF1S	8/18/58	7/30/58	2	44.6	42.0	43.7	14.0	13.0	13.7	129	99	115	376	296	331[a]	400	352	374[a]
179651	WF1S	8/18/58	7/31/58	2	43.4	40.4	42.4	14.1	12.7	13.4	135	90	113	376	288	325[a]	424	312	362[a]
179652	WF1S	8/18/58	8/ 4/58	2	44.0	41.6	43.2	13.7	12.8	13.4	139	93	114	360	296	331[a]	392	328	363[a]
179653	WF1S	8/18/58	8/ 6/58	2	45.0	42.0	43.4	14.0	13.2	13.7	132	97	115	384	288	331[a]	400	304	345[a]
179654	WF1S	8/18/58	8/ 9/58	2	43.8	41.0	42.4	13.8	12.8	13.3	143	88	114	352	280	311[a]	408	312	346[a]
Current Mill Average:							43.0			13.6			112			317			357
Cumulative Mill Average:							42.9			13.6			115			338			372
Mill Factor, %							100.2			100.0			97.4			93.8			96.0
Mill Index, %							99.5			107.1			100.0			95.5			95.5

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--AUGUST 1 THROUGH AUGUST 31, 1958 (continued)

TABLE XI

MILL I -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
179504	W.F.	8/ 7/58	7/29/58	-	45.0	44.0	44.2	13.0	12.2	12.8	127	99	113	384	304	340[a]	416	344	377[a]
179505	W.F.	8/ 7/58	7/30/58	-	44.2	42.8	43.5	12.9	12.2	12.6	138	100	123	384	320	356[a]	432	336	373[a]
179506	W.F.	8/ 7/58	7/31/58	-	45.6	44.0	44.7	13.0	12.0	12.5	134	107	119	416	280	356[a]	448	352	390[a]
179521	W.F.	8/11/58	8/ 6/58	-	44.6	43.4	44.0	13.3	12.4	12.9	137	97	112	376	304	338[a]	424	344	375[a]
179522	W.F.	8/11/58	8/ 7/58	-	46.0	44.0	45.2	13.4	12.8	13.1	126	92	112	392	344	368[a]	408	360	391[a]
179523	W.F.	8/11/58	8/ 8/58	-	45.0	44.0	44.3	13.1	12.2	12.8	129	100	114	384	288	333[a]	432	352	383[a]
179712	W.F.	8/25/58	8/13/58	-	46.0	44.4	45.3	13.8	12.8	13.2	128	88	110	368	280	327[a]	424	352	379[a]
179713	W.F.	8/25/58	8/14/58	-	45.6	43.2	44.7	13.3	12.7	13.0	130	93	108	368	312	341[a]	432	336	371[a]
179714	W.F.	8/25/58	8/15/58	-	45.2	43.8	44.4	13.0	11.3	12.4	127	99	113	368	304	327[a]	416	352	381[a]
Current Mill Average:							44.5			12.8			114			343			380
Cumulative Mill Average:							43.8			12.7			109			338			368
Mill Factor, %							101.6			100.8			104.6			101.5			103.3
Mill Index, %							103.0			100.8			101.8			103.3			101.6

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--AUGUST 1 THROUGH AUGUST 31, 1958 (continued)

TABLE XII

MILL J -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb. Max.	Basis Weight, lb. Min.	Basis Weight, lb. Av.	Caliper, points Max.	Caliper, points Min.	Caliper, points Av.	Bursting Strength, p.s.i. gage Max.	Bursting Strength, p.s.i. gage Min.	Bursting Strength, p.s.i. gage Av.	Elmendorf Tear, g./sheet In Max.	Elmendorf Tear, g./sheet In Min.	Elmendorf Tear, g./sheet In Av.	Elmendorf Tear, g./sheet Across Max.	Elmendorf Tear, g./sheet Across Min.	Elmendorf Tear, g./sheet Across Av.
No samples submitted.																			

TABLE XIII

MILL K -- 42-LB. LINERBOARD

179486	W.F.	8/ 4/58	7/27/58	2	44.0	43.4	43.9	12.9	12.1	12.6	126	95	111	360	288	309[a]	416	328	368[a]
179487	W.F.	8/ 4/58	7/27/58	2	44.0	43.0	43.8	12.3	11.8	12.0	142	93	117	352	256	305[a]	432	336	383[a]
179528	W.F.	8/11/58	8/ 3/58	2	44.4	43.2	44.0	12.7	12.1	12.4	132	99	116	352	304	320[a]	400	352	379[a]
179645	W.F.	8/18/58	8/ 8/58	1	43.8	43.2	43.6	13.5	13.0	13.2	137	89	114	408	288	343[a]	416	328	377[a]
179693	W.F.	8/20/58	8/11/58	2	44.4	43.2	44.0	12.5	11.8	12.2	130	105	114	360	280	322[a]	400	320	365[a]
179694	W.F.	8/20/58	8/12/58	2	44.0	43.2	43.5	12.5	11.8	12.2	125	99	111	400	280	325[a]	400	336	369[a]
179710	W.F.	8/25/58	8/17/58	2	43.6	42.6	43.1	12.5	12.0	12.2	141	102	115	376	272	304[a]	360	328	346[a]
179711	W.F.	8/25/58	8/17/58	2	43.8	42.2	43.3	12.5	12.0	12.3	131	102	116	344	224	282[a]	368	336	351[a]
Current Mill Average:							43.6			12.4			114			314			367
Cumulative Mill Average:							43.6			12.4			116			326			379
Mill Factor, %							100.0			100.0			98.3			96.3			96.8
Mill Index, %							100.9			97.6			101.8			94.6			98.1

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--AUGUST 1 THROUGH AUGUST 31, 1958 (continued)

TABLE XIV

MILL L -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
179474	WF1S	8/ 1/58	7/25/58	1	43.6	41.6	42.3	14.1	12.0	13.1	131	74	107	384	248	295[a]	408	296	357[a]
179609	WF1S	8/13/58	7/30/58	1	44.2	41.8	43.2	14.1	12.9	13.6	137	78	109	336	256	306[a]	416	344	369[a]
Current Mill Average:							42.8			13.4			108			300			363
Cumulative Mill Average:							43.1			13.0			110			309			364
Mill Factor, %							99.3			103.1			98.2			97.1			99.7
Mill Index, %							99.1			105.5			96.4			90.4			97.1

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA—AUGUST 1 THROUGH AUGUST 31, 1958 (continued)

TABLE XV

MILL M — 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
179613	W.F.	8/14/58	8/ 1/58	-	44.1	43.2	43.9	13.9	12.3	13.1	128	85	108	464	264	364[a]	416	352	387[a]
179614	W.F.	8/14/58	8/ 4/58	-	44.0	41.6	42.8	12.3	10.0	11.7	136	94	115	368	296	327	400	336	374[a]
179615	W.F.	8/14/58	8/ 4/58	-	44.0	41.8	43.1	12.7	11.3	11.9	131	102	117	344	272	316[a]	400	344	368[a]
179616	W.F.	8/14/58	8/ 5/58	-	44.6	43.0	43.8	12.4	12.0	12.1	131	100	116	344	264	321[a]	416	376	392[a]
179698	W.F.	8/21/58	8/11/58	-	44.2	42.2	43.5	12.2	11.3	11.9	139	89	116	432	256	333[a]	376	320	349[a]
179699	W.F.	8/21/58	8/17/58	-	44.6	42.0	43.3	12.4	11.5	12.1	134	93	114	360	280	324[a]	440	344	373[a]
179700	W.F.	8/21/58	8/18/58	-	45.0	42.2	43.5	12.2	11.2	11.8	131	105	118	392	304	332[a]	424	328	368[a]
179701	W.F.	8/21/58	8/18/58	-	44.6	42.4	43.7	12.3	11.0	11.8	146	102	120	368	304	330[a]	480	328	394[a]
Current Mill Average:							43.5			12.1			115			331			376
Cumulative Mill Average:							43.7			12.3			115			345			382
Mill Factor, %							99.5			98.4			100.0			95.9			98.4
Mill Index, %							100.7			95.3			102.7			99.7			100.5

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--AUGUST 1 THROUGH AUGUST 31, 1958 (continued)

TABLE XVI

MILL N -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
179509	W.F.	8/ 7/58	7/18/58	2	44.0	42.0	43.0	12.8	11.8	12.3	131	102	115	360	280	313[a]	400	320	370[a]
179510	W.F.	8/ 7/58	7/18/58	2	44.0	42.0	42.9	12.7	11.7	12.1	128	92	113	368	248	314[a]	432	352	377[a]
179529	W.F.	8/11/58	7/28/58	2	43.6	42.0	42.7	12.6	11.6	12.1	130	95	114	376	272	314[a]	400	328	365[a]
179530	W.F.	8/11/58	7/28/58	2	43.2	42.0	42.7	12.2	11.0	11.7	138	81	116	320	256	290[a]	408	344	373[a]
179531	W.F.	8/11/58	8/ 2/58	2	43.8	42.0	42.8	12.5	11.2	12.1	130	92	114	320	256	285[a]	416	312	367[a]
179532	W.F.	8/11/58	8/ 2/58	2	43.0	42.0	42.4	12.1	11.0	11.8	132	91	112	336	240	295[a]	456	328	358[a]
179611	W.F.	8/14/58	8/ 6/58	2	46.0	43.2	44.9	12.8	11.7	12.3	139	78	117	376	312	340[a]	408	352	373[a]
179612	W.F.	8/14/58	8/ 6/58	2	43.6	42.2	42.7	12.4	11.9	12.1	133	98	114	336	280	301	400	336	363[a]
Current Mill Average:							43.0			12.0			114			306			368
Cumulative Mill Average:							43.1			12.3			113			307			363
Mill Factor, %							99.8			97.6			100.9			99.7			101.4
Mill Index, %							99.5			94.5			101.8			92.2			98.4

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--AUGUST 1 THROUGH AUGUST 31, 1958 (continued)

TABLE XVII

MILL O -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
179511	W.F.	8/ 8/58	7/22/58	1	44.0	42.0	43.0	14.2	13.4	13.8	135	85	112	352	248	301[a]	416	320	363[a]
179512	W.F.	8/ 8/58	7/26/58	1	42.4	42.0	42.2	13.8	12.9	13.3	146	98	120	360	272	304[a]	416	336	377[a]
179513	W.F.	8/ 8/58	7/28/58	1	43.4	41.0	42.3	14.3	14.0	14.2	128	80	106	344	272	294[a]	376	304	346[a]
179514	W.F.	8/ 8/58	7/31/58	1	44.2	42.2	43.5	13.8	13.0	13.2	142	101	124	360	256	307[a]	416	320	370[a]
179648	W.F.	8/18/58	8/ 3/58	1	43.6	42.2	43.0	14.0	13.3	13.7	137	95	115	328	232	288	384	336	361[a]
179649	W.F.	8/18/58	8/ 8/58	1	44.0	42.8	43.6	15.5	14.5	15.1	124	74	108	368	296	327[a]	432	328	369[a]
Current Mill Average:							42.9			13.9			114			304			364
Cumulative Mill Average:							42.8			13.3			114			290			358
Mill Factor, %							100.2			104.5			100.0			104.8			101.7
Mill Index, %							99.3			109.4			101.8			91.6			97.3

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--AUGUST 1 THROUGH AUGUST 31, 1958 (continued)

TABLE XVIII

MILL P -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
179484	W.B.	8/ 4/58	7/24/58	-	42.2	40.6	41.7	12.3	11.1	11.8	136	96	117	432	304	346	432	352	380[a]
179485	W.B.	8/ 4/58	7/24/58	-	42.4	40.2	41.8	12.3	10.4	11.6	135	92	115	400	296	339	496	336	399[a]
Current Mill Average:							41.8			11.7			116			342			389
Cumulative Mill Average:							43.1			12.0			112			368			405
Mill Factor, %							97.0			97.5			103.6			92.9			96.0
Mill Index, %							96.8			92.1			103.6			103.0			104.0

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--AUGUST 1 THROUGH AUGUST 31, 1958 (continued)

TABLE XIX

MILL Q -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
179442	W.F.	8/ 1/58	7/16/58	2	44.0	42.6	43.3	13.2	12.5	12.9	137	95	118	352	280	313	400	320	361[a]
179443	W.F.	8/ 1/58	7/17/58	2	44.2	42.8	43.4	13.2	12.4	12.9	129	89	111	368	304	337[a]	408	344	379[a]
179507	W.F.	8/ 7/58	7/22/58	2	44.2	42.6	43.4	13.3	12.4	12.8	143	87	115	400	280	326	408	344	382[a]
179508	W.F.	8/ 7/58	7/23/58	2	43.6	42.4	42.8	12.9	12.2	12.5	135	95	114	416	296	341[a]	408	336	373[a]
Current Mill Average:							43.2			12.8			114			329			374
Cumulative Mill Average:							43.3			12.9			112			352			388
Mill Factor, %							99.8			99.2			101.8			93.5			96.4
Mill Index, %							100.0			100.8			101.8			99.1			100.0

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--AUGUST 1 THROUGH AUGUST 31, 1958 (continued)

TABLE XX

MILL S -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
179526	W.F.	8/11/58	7/14/58	1	44.8	42.2	43.9	13.8	12.3	13.0	131	96	111	344	272	307[a]	400	328	366[a]
179655	W.F.	8/18/58	7/22/58	1	43.8	41.6	42.7	13.1	11.8	12.3	125	95	110	352	240	295[a]	400	304	345[a]
Current Mill Average:							43.3			12.7			111			301			356
Cumulative Mill Average:							43.4			12.7			110			291			349
Mill Factor, %							99.8			100.0			100.9			103.4			102.0
Mill Index, %							100.2			100.0			99.1			90.7			95.2

TABLE XXI

MILL T -- 42-LB. LINERBOARD

179444	WF1S	8/ 1/58	7/19/58	1	43.6	42.8	43.1	13.3	12.7	13.0	133	102	120	368	248	307	400	344	369[a]
179445	WF1S	8/ 1/58	7/21/58	1	43.8	42.4	43.2	13.9	12.3	13.0	143	111	123	368	264	327[a]	424	344	368[a]
Current Mill Average:							43.2			13.0			122			317			369
Cumulative Mill Average:							43.2			13.3			110			318			362
Mill Factor, %							100.0			97.7			110.9			99.7			101.9
Mill Index, %							100.0			102.4			108.9			95.5			98.7

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

As a supplementary part of the Continuous Baseline Study, comparisons of the mill test results with those obtained at The Institute of Paper Chemistry on corresponding samples have been included in this report. As may be noted in Table XXII, the atmospheric conditions used prior to and during the testing period were relatively uniform for the mills which reported this information. However, the preconditioning and conditioning time varied considerably.

TABLE XXII

Mill Code	Preconditioning R.H., %	Temp., °F.	Time, hr.	Conditioning R.H., %	Temp., °F.	Time, hr.
A		None		50	73	24-48
B		None		50	73	0.5
C	50	70-73	24	50	70-73	24
D		None		53	73	--
E		None		58	69-72	--
F	No samples submitted.					
G	50	73	24	50	73	--
H	50	72	24		None	
I	34--35	77-79	8	48-52	72	16
J	No samples submitted.					
K		None		50	73	24
L	50	74	44-52	50	74	2
M		None		50	73	24-48+
N	50	73	24	50	73	24
O		None		65-75	80-90	--
P		None		56	73	48
Q		None		50	73	24
S	38-44	76	0.5	50	73	36-48
T		None		56-60	92-96	--

A summary of the Institute and mill test results for the current period is shown in Table XXIII, and a comparison of differences between Institute and mill test results is given in Table XXIV for the current period and the two previous periods. The comparisons for individual sample

lots are given in Tables XXV to XLIII for the various mills. In all the comparisons given in Tables XXV to XLIII, the Institute's test values have been used as the reference line.

A comparison of the test data in Tables XXIII and XXIV reveals the level of agreement between mill and Institute data for basis weight, caliper, bursting strength, and Elmendorf tear. Table XXIII shows the over-all average difference between Institute and mill test results based on the data for all sample lots submitted by each mill for the current period. In addition, the maximum difference encountered in comparing the Institute and mill test results for a given sample lot is shown. In Table XXIV, the over-all average differences shown for each test in Table XXIII have been calculated on a percentage basis for each mill. In addition, for purposes of comparison, the average percentage differences for the preceding two periods are shown.

It may be noted in Table XXIV that the largest average difference (per cent) between the average basis weight results of the Institute and those of a given mill on corresponding samples is three per cent for the current period. By comparison, the largest average difference (per cent) noted for the previous two periods was also three per cent. Further, it may be noted that the average basis weight results for Mills H, N, P, and Q were higher than that for the Institute, the average result for Mill A was the same, and the average results for the other mills were lower. The variation associated with Mill B may be excessive.

The maximum variation in caliper for the current period is six per cent. This is slightly lower than the maximum variation of seven per cent for the previous two periods. Compared with the Institute's results,

the average test results for Mills E, M, and S were the same, and the average test results for the other mills were lower. The variations of 0.5 point or more may be excessive.

It may be noted in Table XXIII that the bursting strength results exhibited a maximum variation of seven per cent for the current period. The average results for Mills D, H, K, Q, and S were higher than those for the Institute, the average results for Mills B, G, I, O, and P were the same, and the average results for the other mills were lower. Only the variation of seven per cent associated with Mill C appears to be exceptionally large. Agreement between Institute and Mill results is very good in most instances.

It may be seen in Tables XXIII and XXIV that the average machine direction tear results for Mills E, G, H, K, Q, and T were higher than those for the Institute, whereas the average result for Mill S was the same, and the average results for the other mills were lower. The maximum variation for the current period was eleven per cent. Agreement between the Institute and mill results is good in most cases. However, several mills are associated with differences greater than ten per cent which may be excessive.

With regard to the cross-machine direction tear results, it may be noted that the average results for Mills B, E, G, H, K, L, M, N, O, P, Q, S, and T were higher than those for the Institute, whereas the average results for Mills C, D, and I were lower. The maximum variation for the current period was eighteen per cent. As in the case of the machine direction results, agreement between Institute and mill results is generally good. Only three mills--G, Q, and I--are associated with test results which vary by more than ten per cent from the Institute results and consequently may be excessive.

TABLE XXIII

SUMMARY OF TEST RESULT COMPARISONS (AVERAGE MILL AND INSTITUTE RESULTS)

Mills*	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	S	T
No. Samples Compared	5	4	2	4	2	0	4	11	9	0	8	2	8	8	6	2	4	2	2
Basis Weight																			
Institute	41.8	43.6	43.3	43.3	43.1		44.1	43.0	44.5		43.6	42.8	43.5	43.0	42.9	41.8	43.2	43.3	43.2
Mill	41.8	42.4	43.0	42.3	42.7		43.8	43.4	44.2		43.0	41.9	43.4	43.2	42.3	41.9	43.4	43.2	42.2
Av. Diff.**	0.0	-1.2	-0.3	-1.0	-0.4		-0.3	+0.4	-0.3		-0.6	-0.9	-0.1	+0.2	-0.6	+0.1	+0.2	-0.1	-1.0
Max. Diff.***	-0.3	-1.4	-0.3	-1.4	-0.6		-0.6	+2.1	-0.9		-1.3	-1.1	-0.6	+0.6	-1.3	+0.2	+0.7	-0.6	-1.0
Caliper																			
Institute	12.7	12.2	13.1	14.0	12.7		13.9	13.6	12.8		12.4	13.4	12.1	12.0	13.9	11.7	12.8	12.7	13.0
Mill	12.3	12.0	12.8	13.1	12.7		13.2	13.2	12.5		12.1	12.9	12.1	11.8	13.3	11.4	12.3	12.7	12.5
Av. Diff.**	-0.4	-0.2	-0.3	-0.9	0.0		-0.7	-0.4	-0.3		-0.3	-0.5	0.0	-0.2	-0.6	-0.3	-0.5	0.0	-0.5
Max. Diff.***	-0.7	-0.4	-0.5	-0.9	±0.1		-0.9	-1.2	-0.8		-0.5	-0.6	+0.3	-0.5	-0.8	-0.3	-0.7	+0.1	-0.5
Bursting Strength																			
Institute	110	112	114	105	109		108	112	114		114	108	115	114	114	116	114	111	122
Mill	104	112	106	106	107		108	114	114		116	105	114	112	114	116	120	112	115
Av. Diff.**	-6	0	-8	+1	-2		0	+2	0		+2	-3	-1	-2	0	0	+6	+1	-7
Max. Diff.***	-9	+2	-10	+3	-4		±1	+11	± 4		+4	-5	-5	-5	-16	0	+8	+2	-9
Tearing Strength, in																			
Institute	342	359	351	362	309		348	317	343		314	300	331	306	304	342	329	301	317
Mill	--	335	314	342	342		352	325	333		324	282	317	302	283	335	358	301	352
Av. Diff.**	--	-24	-37	-20	+33		+4	+8	-10		+10	-18	-14	-4	-21	-7	+29	0	+35
Max. Diff.***	--	-39	-40	-43	+38		+29	+46	-44		+34	-36	-38	-15	-29	-27	+50	- 7	+46
Tearing Strength, across																			
Institute	389	364	402	382	393		379	357	380		367	363	376	368	364	389	374	356	369
Mill	--	367	398	365	430		423	389	369		387	378	399	373	376	395	424	367	435
Av. Diff.**	--	+3	-4	-17	+37		+44	+32	-11		+20	+15	+23	+5	+12	+6	+50	+11	+66
Max. Diff.***	--	±10	-32	-30	+48		+73	+77	-30		+52	+29	+58	-27	+24	+6	+66	+14	+68

* Comparison based on averages involved only those samples on which mill test data were submitted.
** Average difference is the difference between the Institute mill average and the mill average based on mill test data.
*** Maximum difference encountered in comparing the Institute average and the mill averages for any sample submitted by that particular mill.

TABLE XXIV

COMPARISON OF INSTITUTE-MILL DIFFERENCES BY PERIODS
Average Difference, Per Cent

Mill	Period	Basis Weight	Caliper	Burst	Tear, in	Tear, across
A	Current	0	-3	-5	--	--
	133rd	-0.9	-3	-5	--	--
	132nd	-1	-2	-3	--	--
B	Current	-3	-2	0	-7	+0.8
	133rd	-3	-2	0	-0.6	+1
	132nd	-3	-2	-4	-8	-5
C	Current	-0.7	-2	-7	-11	-1
	133rd	-0.5	-4	0	-1	+4
	132nd	+0.2	-2	-3	-3	+6
D	Current	-2	-6	+1	-6	-4
	133rd	-1	-5	+4	-5	-3
	132nd	+0.7	-7	+3	-8	0
E	Current	-0.9	0	-2	+11	+9
	133rd	-2	-2	-4	+23	+7
	132nd	-0.5	-0.8	-2	+18	+10
F	Current	--	--	--	--	--
	133rd	-1	-2	-7	-10	-5
	132nd	+0.2	-4	-10	-14	+2
G	Current	-0.7	-5	0	+1	+12
	133rd	0	-2	+5	+3	+3
	132nd	-0.2	-0.8	+4	-2	+5
H	Current	+0.9	-3	+2	+3	+9
	133rd	+1	-0.8	-0.9	+2	+9
	132nd	+2	-1	+2	+7	+12
I	Current	-0.7	-2	0	-3	-3
	133rd	-0.7	-2	+0.9	-4	-4
	132nd	0	-3	0	-7	-6
J	Current	--	--	--	--	--
	133rd	--	--	--	--	--
	132nd	--	--	--	--	--
K	Current	-1	-2	+2	+3	+5
	133rd	-2	-2	-2	-3	+1
	132nd	-3	-2	-2	-3	+2
L	Current	-2	-4	-3	-6	+4
	133rd	-1	-4	-6	-13	+0.5
	132nd	-0.9	-5	-6	-13	-1
M	Current	-0.2	0	-0.9	-4	+6
	133rd	-1	0	-0.9	-2	+3
	132nd	-0.7	+2	-0.9	-8	-0.8
N	Current	+0.5	-2	-2	-1	+1
	133rd	-0.7	-2	-3	+0.7	-3
	132nd	-0.2	-3	-3	-0.7	-2
O	Current	-1	-4	0	-7	+3
	133rd	-3	-4	-3	-6	+1
	132nd	-3	-2	-4	-7	-0.3
P	Current	+0.2	-3	0	-2	+2
	133rd	--	--	--	--	--
	132nd	-0.9	-3	+2	-8	-3
Q	Current	+0.5	-4	+5	+9	+13
	133rd	-0.2	-4	+3	+9	+12
	132nd	0	-2	+6	+2	+11
S	Current	-0.2	0	+0.9	0	+3
	133rd	-0.2	+0.8	-2	+8	+7
	132nd	0	+0.8	-2	+11	+11
T	Current	-2	-4	-6	+11	+18
	133rd	-2	-2	-4	+27	+15
	132nd	-3	-3	+0.9	+15	+16

COMPARISON OF INSTITUTE AND MILL DATA--AUGUST 1 THROUGH AUGUST 31, 1958

TABLE XXV

MILL A -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
179441	---	7/24/58	1	40.1	39.8	-0.3	12.3	12.1	-0.2	106	101	-5	318			349[a]		
179481	---	7/28/58	1	42.8	42.7	-0.1	13.0	12.3	-0.7	103	99	-4	351[a]			379[a]		
179610	---	8/ 6/58	2	42.0	42.1	+0.1	13.0	12.8	-0.2	111	102	-9	349			404[a]		
179646	---	8/ 8/58	2	42.2	42.4	+0.2	12.7	12.4	-0.3	114	105	-9	347[a]			391[a]		
179647	---	8/13/58	2	41.9	42.1	+0.2	12.6	12.2	-0.4	118	110	-8	346			421[a]		
Current Mill Average:				41.8	41.8	0.0	12.7	12.3	-0.4	110	104	-6	342			389		

TABLE XXVI

MILL B -- 42-LB. LINERBOARD

179482	W.F.	7/ 9/58	-	43.2	42.3	-0.9	11.9	11.8	-0.1	113	115	+2	375[a]	336	-39	371[a]	361	-10
179483	W.F.	7/ 9/58	-	43.7	42.4	-1.3	12.1	11.8	-0.3	115	115	0	365	342	-23	364[a]	368	+ 4
179492	W.F.	7/28/58	-	43.7	42.6	-1.1	12.5	12.3	-0.2	110	109	-1	354	329	-25	356[a]	366	+10
179493	W.F.	7/28/58	-	43.7	42.3	-1.4	12.4	12.0	-0.4	109	108	-1	342[a]	333	- 9	363[a]	373	+10
Current Mill Average:				43.6	42.4	-1.2	12.2	12.0	-0.2	112	112	0	359	335	-24	364	367	+ 3

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--AUGUST 1 THROUGH AUGUST 31, 1958 (continued)

TABLE XXVII

MILL C -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet In			Elmendorf Tear, g./sheet Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
179527	---	7/29/58	2	44.0	43.9	-0.1	13.0	12.8	-0.2	119	113	- 6	359[a]	325	-34	422[a]	448	+26
179705	N-7	8/13/58	2	42.5	42.2	-0.3	13.3	12.8	-0.5	109	99	-10	343[a]	303	-40	381[a]	349	-32
Current Mill Average:				43.3	43.0	-0.3	13.1	12.8	-0.3	114	106	- 8	351	314	-37	402	398	- 4

TABLE XXVIII

MILL D -- 42-LB. LINERBOARD

179479	W.	7/24/58	2	44.2	42.8	-1.4	14.1	13.2	-0.9	106	107	+ 1	355	351	- 4	379[a]	373	- 6
179480	W.	7/25/58	2	43.9	42.5	-1.4	14.1	13.2	-0.9	102	105	+ 3	355[a]	345	-10	379[a]	364	-15
179524	W.	7/31/58	2	42.4	41.9	-0.5	14.1	13.3	-0.8	104	105	+ 1	350[a]	327	-23	379[a]	364	-15
179525	W.	8/ 4/58	2	42.7	42.1	-0.6	13.6	12.8	-0.8	109	107	- 2	388	345	-43	391[a]	361	-30
Current Mill Average:				43.3	42.3	-1.0	14.0	13.1	-0.9	105	106	+ 1	362	342	-20	382	365	-17

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--AUGUST 1 THROUGH AUGUST 31, 1958 (continued)

TABLE XXIX

MILL E -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
179706	WF1S	8/12/58	1	43.3	42.7	-0.6	12.8	12.7	-0.1	113	109	-4	307[a]	345	+38	405[a]	431	+26
179707	WF1S	8/13/58	1	43.0	42.6	-0.4	12.6	12.7	+0.1	105	106	+1	311	338	+27	381[a]	429	+48
Current Mill Average:				43.1	42.7	-0.4	12.7	12.7	0.0	109	107	-2	309	342	+33	393	430	+37

TABLE XXX

MILL F -- 42-LB. LINERBOARD

No samples submitted

TABLE XXXI

MILL G -- 42-LB. LINERBOARD

179488	W.F.	7/22/58	1	43.2	43.2	0.0	13.6	13.2	-0.4	109	110	+1	357	353	- 4	387[a]	428	+41
179489	W.F.	7/22/58	1	43.3	43.1	-0.2	13.9	13.3	-0.6	108	107	-1	345	331	-14	371[a]	444	+73
179490	W.F.	7/23/58	1	44.5	43.9	-0.6	13.9	13.0	-0.9	108	107	-1	342[a]	371	+29	380[a]	401	+21
179491	W.F.	7/23/58	1	45.4	44.8	-0.6	14.3	13.4	-0.9	108	107	-1	349[a]	354	+ 5	379[a]	420	+41
Current Mill Average:				44.1	43.8	-0.3	13.9	13.2	-0.7	108	108	0	348	352	+ 4	379	423	+44

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--AUGUST 1 THROUGH AUGUST 31, 1958 (continued)

TABLE XXXII

MILL H -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
179515	WF1S	7/24/58	2	43.1	43.3	+0.2	13.5	13.1	-0.4	109	112	+ 3	316	317	+ 1	355[a]	382	+27
179516	WF1S	7/25/58	2	42.9	43.3	+0.4	14.0	13.8	-0.2	99	104	+ 5	307[a]	310	+ 3	348[a]	368	+20
179517	WF1S	7/26/58	2	43.6	42.2	-1.4	13.7	12.5	-1.2	111	111	0	331[a]	317	-14	365[a]	370	+ 5
179518	WF1S	7/27/58	2	42.2	44.3	+2.1	13.2	13.8	+0.6	117	116	- 1	307[a]	353	+46	363[a]	440	+77
179519	WF1S	7/28/58	2	42.6	43.8	+1.2	13.9	13.5	-0.4	105	116	+11	290[a]	308	+18	349[a]	401	+52
179520	WF1S	7/29/58	2	43.0	43.4	+0.4	13.8	13.0	-0.8	116	116	0	307[a]	327	+20	360[a]	394	+34
179650	WF1S	7/30/58	2	43.7	44.1	+0.4	13.7	13.3	-0.4	115	118	+ 3	331[a]	342	+11	374[a]	362	-12
179651	WF1S	7/31/58	2	42.4	42.7	+0.3	13.4	12.8	-0.6	113	112	- 1	325[a]	311	-14	362[a]	389	+27
179652	WF1S	8/ 4/58	2	43.2	43.7	+0.5	13.4	13.3	-0.1	114	116	+ 2	331[a]	339	+ 8	363[a]	396	+33
179653	WF1S	8/ 6/58	2	43.4	43.7	+0.3	13.7	13.0	-0.7	115	116	+ 1	331[a]	322	- 9	345[a]	401	+56
179654	WF1S	8/ 9/58	2	42.4	43.3	+0.9	13.3	12.8	-0.5	114	114	0	311[a]	326	+15	346[a]	380	+34
Current Mill Average:				43.0	43.4	+0.4	13.6	13.2	-0.4	112	114	+ 2	317	325	+ 8	357	389	+32

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--AUGUST 1 THROUGH AUGUST 31, 1958 (continued)

TABLE XXXIII

MILL I -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
179504	W.F.	7/29/58	-	44.2	43.9	-0.3	12.8	12.8	0.0	113	113	0	340[a]	336	- 4	377[a]	369	- 8
179505	W.F.	7/30/58	-	43.5	44.0	+0.5	12.6	12.5	-0.1	123	122	-1	356[a]	321	-35	373[a]	377	+ 4
179506	W.F.	7/31/58	-	44.7	43.8	-0.9	12.5	12.0	-0.5	119	120	+1	356[a]	337	-19	390[a]	360	-30
179521	W.F.	8/ 6/58	-	44.0	44.2	+0.2	12.9	12.8	-0.1	112	116	+4	338[a]	351	+13	375[a]	368	- 7
179522	W.F.	8/ 7/58	-	45.2	44.8	-0.4	13.1	12.8	-0.3	112	113	+1	368[a]	352	-16	391[a]	395	+ 4
179523	W.F.	8/ 8/58	-	44.3	44.4	+0.1	12.8	12.4	-0.4	114	112	-2	333[a]	337	+ 4	383[a]	376	- 7
179712	W.F.	8/13/58	-	45.3	44.6	-0.7	13.2	12.4	-0.8	110	112	+2	327[a]	296	-31	379[a]	359	-20
179713	W.F.	8/14/58	-	44.7	44.2	-0.5	13.0	12.4	-0.6	108	110	+2	341[a]	340	- 1	371[a]	359	-12
179714	W.F.	8/15/58	-	44.4	44.2	-0.2	12.4	12.3	-0.1	113	109	-4	327[a]	323	-44	381[a]	356	-25
Current Mill Average:				44.5	44.2	-0.3	12.8	12.5	-0.3	114	114	0	343	333	-10	380	369	-11

TABLE XXXIV

MILL J -- 42-LB. LINERBOARD

No samples submitted

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--AUGUST 1 THROUGH AUGUST 31, 1958 (continued)

TABLE XXXV

MILL K -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
179486	W.F.	7/27/58	2	43.9	42.9	-1.0	12.6	12.2	-0.4	111	114	+ 3	309[a]	326	+17	368[a]	387	+19
179487	W.F.	7/27/58	2	43.8	42.5	-1.3	12.0	11.5	-0.5	117	117	0	305[a]	329	+24	383[a]	373	- 9
179528	W.F.	8/ 3/58	2	44.0	43.4	-0.6	12.4	12.1	-0.3	116	117	+ 1	320[a]	330	+10	379[a]	389	+10
179645	W.F.	8/ 8/58	1	43.6	42.9	-0.7	13.2	12.7	-0.5	114	115	+ 1	343[a]	330	-13	377[a]	387	+10
179693	W.F.	8/11/58	2	44.0	43.2	-0.8	12.2	12.0	-0.2	114	116	+ 2	322[a]	318	- 4	365[a]	384	+19
179694	W.F.	8/12/58	2	43.5	43.3	-0.2	12.2	12.1	-0.1	111	115	+ 4	325[a]	319	- 6	369[a]	385	+16
179710	W.F.	8/17/58	2	43.1	42.9	-0.2	12.2	12.0	-0.2	115	116	+ 1	304[a]	323	+19	346[a]	398	+52
179711	W.F.	8/17/58	2	43.3	42.8	-0.5	12.3	12.0	-0.3	116	115	- 1	282[a]	316	+34	351[a]	390	+39
Current Mill Average:				43.6	43.0	-0.6	12.4	12.1	-0.3	114	116	+ 2	314	324	+10	367	387	+20

TABLE XXXVI

MILL L -- 42-LB. LINERBOARD

179474	WF1S	7/25/58	1	42.3	41.2	-1.1	13.1	12.5	-0.6	107	106	- 1	295[a]	259	-36	357[a]	358	+ 1
179609	WF1S	7/30/58	1	43.2	42.6	-0.6	13.6	13.2	-0.4	109	104	- 5	306[a]	304	- 2	369[a]	398	+29
Current Mill Average:				42.8	41.9	-0.9	13.4	12.9	-0.5	108	105	- 3	300	282	-18	363	378	+15

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--AUGUST 1 THROUGH AUGUST 31, 1958 (continued)

TABLE XXXVII

MILL M -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
179613	W.F.	8/ 1/58	-	43.9	44.3	+0.4	13.1	13.1	0.0	108	106	-2	364[a]	329	-35	387[a]	412	+25
179614	W.F.	8/ 4/58	-	42.8	42.7	-0.1	11.7	11.8	+0.1	115	113	-2	327	304	-23	374[a]	389	+15
179615	W.F.	8/ 4/58	-	43.1	43.0	-0.1	11.9	11.8	-0.1	117	118	+1	316[a]	312	- 4	368[a]	388	+20
179616	W.F.	8/ 5/58	-	43.8	44.0	+0.2	12.1	12.4	+0.3	116	117	+1	321[a]	329	+ 8	392[a]	407	+15
179698	W.F.	8/11/58	-	43.5	43.5	0.0	11.9	11.8	-0.1	116	112	-4	333[a]	295	-38	349[a]	407	+58
179699	W.F.	8/17/58	-	43.3	43.2	-0.1	12.1	12.3	+0.2	114	117	+3	324[a]	325	+ 1	373[a]	385	+12
179700	W.F.	8/18/58	-	43.5	43.1	-0.4	11.8	11.9	+0.1	118	115	-3	332[a]	320	-12	368[a]	399	+31
179701	W.F.	8/18/58	-	43.7	43.1	-0.6	11.8	11.9	+0.1	120	115	-5	330[a]	319	-11	394[a]	403	+ 9
Current Mill Average:				43.5	43.4	-0.1	12.1	12.1	0.0	115	114	-1	331	317	-14	376	399	+23

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--AUGUST 1 THROUGH AUGUST 31, 1958 (continued)

TABLE XXXVIII

MILL N -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet In			Elmendorf Tear, g./sheet Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
179509	W.F.	7/18/58	2	43.0	43.0	0.0	12.3	11.8	-0.5	115	110	- 5	313[a]	298	-15	370[a]	375	+ 5
179510	W.F.	7/18/58	2	42.9	43.2	+0.3	12.1	11.9	-0.2	113	111	- 2	314[a]	299	-15	377[a]	381	+ 4
179529	W.F.	7/28/58	2	42.7	43.3	+0.6	12.1	11.9	-0.2	114	111	- 3	314[a]	303	-11	365[a]	382	+17
179530	W.F.	7/28/58	2	42.7	42.7	0.0	11.7	11.5	-0.2	116	114	- 2	290[a]	279	-11	373[a]	346	-27
179531	W.F.	8/ 2/58	2	42.8	43.3	+0.5	12.1	11.9	-0.2	114	112	- 2	285[a]	298	+13	367[a]	381	+14
179532	W.F.	8/ 2/58	2	42.4	42.7	+0.3	11.8	11.6	-0.2	112	113	+ 1	295[a]	295	0	358[a]	377	+19
179611	W.F.	8/ 6/58	2	44.9	44.7	-0.2	12.3	12.0	-0.3	117	114	- 3	340[a]	333	- 7	373[a]	374	+ 1
179612	W.F.	8/ 6/58	2	42.7	43.0	+0.3	12.1	11.9	-0.2	114	111	- 3	301	313	+12	363[a]	367	+ 4
Current Mill Average:				43.0	43.2	+0.2	12.0	11.8	-0.2	114	112	- 2	306	302	- 4	368	373	+ 5

TABLE XXXIX

MILL O -- 42-LB. LINERBOARD

179511	W.F.	7/22/58	1	43.0	42.4	-0.6	13.8	13.3	-0.5	112	114	+ 2	301[a]	292	- 9	363[a]	384	+21
179512	W.F.	7/26/58	1	42.2	42.2	0.0	13.3	12.7	-0.6	120	118	- 2	304[a]	275	-29	377[a]	381	+ 4
179513	W.F.	7/28/58	1	42.3	42.1	-0.2	14.2	13.4	-0.8	106	114	+ 8	294[a]	278	-16	346[a]	370	+24
179514	W.F.	7/31/58	1	43.5	42.2	-1.3	13.2	13.3	+0.1	124	108	-16	307[a]	282	-25	370[a]	380	+10
179648	W.F.	8/ 3/58	1	43.0	42.0	-1.0	13.7	13.0	-0.7	115	117	+ 2	288	265	-23	361[a]	353	- 8
179649	W.F.	8/ 8/58	1	43.6	42.8	-0.8	15.1	14.5	-0.6	108	110	+ 2	327[a]	302	-25	369[a]	390	+21
Current Mill Average:				42.9	42.3	-0.6	13.9	13.3	-0.6	114	114	0	304	283	-21	364	376	+12

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--AUGUST 1 THROUGH AUGUST 31, 1958 (continued)

TABLE XL

MILL P -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet In			Elmendorf Tear, g./sheet Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
179484	W.B.	7/24/58	-	41.7	41.9	+0.2	11.8	11.5	-0.3	117	117	0	346	319	-27	380[a]	384	+ 4
179485	W.B.	7/24/58	-	41.8	41.9	+0.1	11.6	11.4	-0.2	115	115	0	339	352	+13	399[a]	405	+ 6
Current Mill Average:				41.8	41.9	+0.1	11.7	11.4	-0.3	116	116	0	342	335	- 7	389	395	+ 6

TABLE XLI

MILL Q -- 42-LB. LINERBOARD

179442	W.F.	7/16/58	2	43.3	43.1	-0.2	12.9	12.2	-0.7	118	118	0	313	363	+50	361[a]	427	+66
179443	W.F.	7/17/58	2	43.4	43.3	-0.1	12.9	12.4	-0.5	111	117	+6	337[a]	355	+18	379[a]	422	+43
179507	W.F.	7/22/58	2	43.4	43.5	+0.1	12.8	12.2	-0.6	115	123	+8	326	356	+30	382[a]	429	+47
179508	W.F.	7/23/58	2	42.8	43.5	+0.7	12.5	12.2	-0.3	114	121	+7	341[a]	357	+16	373[a]	418	+45
Current Mill Average:				43.2	43.4	+0.2	12.8	12.3	-0.5	114	120	+6	329	358	+29	374	424	+50

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--AUGUST 1 THROUGH AUGUST 31, 1958 (continued)

TABLE XLII

MILL S -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
179526	W.F.	7/14/58	1	43.9	43.3	-0.6	13.0	13.0	0.0	111	113	+2	307[a]	313	+ 6	366[a]	376	+10
179655	W.F.	7/22/58	1	42.7	43.1	+0.4	12.3	12.4	+0.1	110	110	0	295[a]	288	- 7	345[a]	359	+14
Current Mill Average:				43.3	43.2	-0.1	12.7	12.7	0.0	111	112	+1	301	301	0	356	367	+11

TABLE XLIII

MILL T -- 42-LB. LINERBOARD

179444	WF1S	7/19/58	1	43.1	42.2	-0.9	13.0	12.5	-0.5	120	115	-5	307	353	+46	369[a]	435	+66
179445	WF1S	7/21/58	1	43.2	42.2	-1.0	13.0	12.5	-0.5	123	114	-9	327[a]	352	+25	368[a]	436	+68
Current Mill Average:				43.2	42.2	-1.0	13.0	12.5	-0.5	122	115	-7	317	352	+35	369	435	+66

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.